



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,088	12/02/2003	Rced J. Blau	2507-6010US(22031-US-02)	6016
60794	7590	11/21/2007		
TRASKBRITT, P.C./ ALLIANT TECH SYSTEMS			EXAMINER	
P.O. BOX 2550			HWU, DAVIS D	
SALT LAKE CITY, UT 84110			ART UNIT	PAPER NUMBER
			3752	
			NOTIFICATION DATE	DELIVERY MODE
			11/21/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTOMail@traskbritt.com

Office Action Summary

Application No.

10/727,088

Applicant(s)

BLAU ET AL.

Examiner

Davis D. Hwu

Art Unit

3752

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-16, 18-67, 69-90 and 94-115 is/are pending in the application.
- 4a) Of the above claim(s) 29, 30, 66, 67, 83-90 and 94-114 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-16, 18-28, 31-65, 69-82 and 115 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 8/9/07.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7-9, 11-14, 18, 23-25, 57-61, 63-65, 69, and 73-75 are rejected under 35 U.S.C. 102(b) as being anticipated by Galbraith (US Patent 5,449,041). Galbraith shows a fire suppression system comprising a chamber 12 and at least one gas generant 14 housed therein the gas generant formulated to pyrotechnically produce an inert gas mixture comprising carbon dioxide, the system configured to dispel the inert gas mixture comprising carbon dioxide in a concentration less than or equal to the concentration pyrotechnically produced by the at least one gas generant. The system also shows an igniter 32 and a heat management system 38 as recited in claims 2 and 3 and at least one solid as recited in claim 4 (Column 4, line 66). The device will carry out the methods of claims 57-61.

Claim Rejections - 35 USC § 103

4. Claims 10, 22, 62, 72, 77, 78, and 115 rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith.

Art Unit: 3752

Galbraith also discloses the propellant generating nitrogen gas and a slag. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have the propellant made to produce a slag along with the carbon dioxide since the production of slag along with a gas has been taught by Galbraith. The limitations of claims 22, 62, and 72 would have been matters of design choice depending on the systems requirements for a particular application. It is well known that fires are extinguished by reducing an oxygen content in a space. The amount of CO₂ as recited in claim 115 would have been a matter of design choice.

5. Claims 15, 70, 79, and 80 rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Taylor et al. and Moore et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Moore et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith comprising a combination of the elements as taught by Taylor et al. and Moore et al. since Taylor et al. and Moore et al. teach such elements for forming a gas generant are known in the art and the combination of these elements would properly form a gas generant.

6. Claims 16 and 71, 81, and 82 rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Taylor et al. and Hinshaw et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(ammine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the

Art Unit: 3752

time the invention was made to have made the gas generant of Galbraith comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are known in the art and the combination of these elements would properly form a gas generant.

7. Claims 19-21 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Knowlton et al.

Knowlton et al. teaches a gas generant comprising a phase change material including lithium nitrate, sodium nitrate, and potassium nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included into the gas generant of Galbraith a phase change material comprising the various nitrates as recited in order to manage the heat.

8. Claims 26-28, 31-45, 48, 49, and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Drakin.

Drakin discloses the heat management comprising an effluent train. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the device of Galbraith to use an effluent train in the heat management system since such arrangements have already been taught by Drakin. The gas generant being configured into at least one pellet would have been an obvious matter of design choice since such a modification would involve a mere change in the shape of an object which is generally recognized as being within the level of ordinary skill in the art. Regarding claim 37, the percentage as recited would have been a matter of design choice in producing a safe concentration of the substances. The limitations of claim 53

Art Unit: 3752

would have been matters of design choice depending on the systems requirements for a particular application. It is well known that fires are extinguished by reducing an oxygen content in a space.

9. Claim 46 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view Drakin and in further view of Taylor et al. and Moore et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Moore et al. teaches a gas generant comprising hexa(amine)cobalt-nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith and Drakin comprising a combination of the elements as taught by Taylor et al. and Moore et al. since Taylor et al. and Moore et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

10. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Drakin and in further view of Taylor et al. and Hinshaw et al.

Taylor et al. teaches a gas generant comprising cupric oxide and titanium dioxide and Hinshaw et al. teaches a gas generant comprising hexa(amine)cobalt-nitrate and polyacrylamide. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have made the gas generant of Galbraith and Drakin comprising a combination of the elements as taught by Taylor et al. and Hinshaw et al. since Taylor et al. and Hinshaw et al. teach such elements for forming a gas generant are know in the art and the combination of these elements would properly form a gas generant.

Art Unit: 3752

11. Claims 50-52 and 76 are rejected under 35 U.S.C. 103(a) as being unpatentable over Galbraith in view of Drakin and further in view of Knowlton et al.

Knowlton et al. teaches a gas generant comprising a phase change material including lithium nitrate, sodium nitrate, and potassium nitrate. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included into the gas generant of Galbraith and Drakin a phase change material comprising the various nitrates as recited in order to manage the heat.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Davis D. Hwu whose telephone number is 571-272-4904. The examiner can normally be reached on 8:00-4:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kevin Shaver can be reached on 571-272-4720. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.



Primary Examiner